SECTION I
GENERAL INFORMATION

1-1. INTRODUCTION.

1-2. This section contains general information concerning the -hp- Model 3476A Multimeter. Included is an instrument description, specifications, information about instrument and manual identification, option and accessory information, and safety considerations.

1-3. DESCRIPTION.

1-4. The -hp- Model 3476A Multimeter is a 3 digit, five function, autoranging instrument which measures ac and dc voltage, ac and dc current, and ohms. A HOLD function is provided to enable the user to make repeated measurements without changing ranges. The sample rate is approximately three readings per second. Throughout the remainder of this manual, the 3476A Multimeter will be referred to as Multimeter.

1-5. SPECIFICATIONS.

1-6. Specifications for the Multimeter are listed in Table 1-1. These specifications are the performance standards or limits to which the Multimeter can be tested. Any changes in these specifications due to manufacturing changes, design or traceability to the National Bureau of Standards will be

Table 1-1. Specifications.

DC VOLTMETER

Ranges: ± 0.11 V, 1.1 V, 11 V, 110 V, 1100 V (1000 V Maximum Input)
Accuracy (20°C to 30°C):

Ranges	Accuracy (90-Day Calibration Cycle)	Accuracy (1-Year Calibration Cycle)
0.11 V	± (0.3% of reading + .2% of range)	± (0.5% of reading + 0.2% of range)
1.1 V, 11 V	± (0.3% of reading + 0.1% of range)	± (0.5% of reading + 0.1% of range)
110 V, 1100 V	± (0.4% of reading + 0.1% of range)	± (0.6% of reading + 0.1% of range)

Common Mode Rejection: > 100 dB at 50 Hz, 60 Hz (1 kΩ unbalanced)
Input Resistance: 10 MΩ ± 5%
Input Protection: < 1000 V (Continuous)
Temperature Coefficient: ± (0.05% of reading + 0.02% of range)/°C

AC VOLTMETER:

Ranges: 0.11 V rms, 1.1 V rms, 11 V rms, 110 V rms, 1100 V rms (707 V rms Maximum)
Accuracy (20°C to 30°C):

	Accuracy (90-Day Calibration Cycle)		
Ranges*	45 Hz to 2 kHz	2 kHz to 5 kHz	5 kHz to 10 kHz
1.1 V rms to 1100 V rms	± (1.5% of reading + 0.4% of range)	± (3% of reading + 0.6% of range)	± (8% of reading + 1.0% of range)
0.11 V rms	± (2% of reading + 0.6% of range)	± (5% of reading + 0.6% of range)	± (18% of reading + 1.0% of range)

	Accuracy (1-Year Calibration Cycle)		
	45 Hz to 2 kHz	2 kHz to 5 kHz	5 kHz to 10 kHz
1.1 V rms to 1100 V rms	± (1.7% of reading + 0.5% of range)	± (3.2% of reading + 0.7% of range)	± (8.2% of reading + 1.1% of range)
0.11 V rms	± (2.2% of reading + 0.7% of range)	± (5.2% of reading + 0.7% of range)	± (18.2% of reading + 1.1% of range)

*Ranges usable from 0.03 to full scale.
Common Mode Rejection: (1 kΩ balanced) > 80 dB at 50 Hz and 60 Hz
Input Resistance: 10 MΩ ± 5%
Input Capacitance: < 30 pF
Input Protection: < 707 rms continuous
Temperature Coefficient: ± (0.05% of reading + 0.05% of range)/°C

Table 1-1. Specifications (Cont'd).

DC AMMETER

Ranges: ± 0.11 A, 1.1 A (1.1 A maximum input)
Accuracy (20°C to 30°C):

Ranges	Accuracy (90-Day Calibration Cycle)	Accuracy (1-Year Calibration Cycle)
± 0.11 A, 1.1 A	± (0.8% of reading + 0.2% of range)	± (1.0% of reading + 0.2% of range)

Impedance: 1 – 1.5 ohm constant
Protection: 1.5 A fuse to 250 V (> 250 V will damage the instrument)
Temperature Coefficient: ± (0.05% of reading + 0.02% of range)/°C

AC AMMETER

Ranges: 0.11 A rms, 1.1 A rms (1.1 rms maximum input)
Accuracy (20°C to 30°C):

	Accuracy (90-Day Calibration Cycle)		Accuracy (1-Year Calibration Cycle)	
Ranges*	45 Hz to 2 kHz	2 kHz to 5 kHz	45 Hz to 2 kHz	2 kHz to 5 kHz
1.1 A rms	± (2% of reading + 0.4% of range)	± (3.5% of reading + 0.6% of range)	± (2.2% of reading + 0.5% of range)	± (3.7% of reading + 0.7% of range)
0.11 A rms	± (2.5% of reading + 0.6% of range)	± (5.5% of reading + 0.6% of range)	± (2.7% of reading + 0.7% of range)	± (5.7% of reading + 0.7% of range)

*Ranges usable from 0.03 to full scale.
Impedance: 1 – 1.5 ohm constant
Protection: 1.5 A fuse to 250 V (> 250 V will damage the instrument)
Temperature Coefficient: ± (0.05 of reading + 0.05% of range)/°C

OHMMETER

Ranges: 1.1 kΩ, 11 kΩ, 110 kΩ, 1100 kΩ, 11000 kΩ
Accuracy: (20°C to 30°C)

Ranges	Accuracy (90-Day Calibration Cycle)	Accuracy (1-Year Calibration Cycle)
110 K, 1100 K	± (0.3% of reading + 0.1% of range)	± (0.5% of reading + 0.1% of range)
11000 K, 1.1 K, 11 K	± (0.5% of reading + 0.1% of range)	± (0.7% of reading + 0.1% of range)

Open Circuit Voltage: < 4 V
Input Voltage Protection: < 30 V rms continuous, no effect;
30 V to 250 V rms requires replacement of input fuse; > 250 V will damage instrument.
Temperature Coefficient: ± (0.05% of reading + 0.02% of range)/°C

Table 1-2. General Information.

Ranging: Automatic or Hold Mode
Sample Rate: approximately 3 samples per second
Operating Environmental conditions:
Temperature range: 0°C to 40°C
Humidity: < 95% RH
Power:
AC line, < 6 VA at:
Standard, 104–127 V, 54–66 Hz
Option 001, 86–106 V, 54–66 Hz
Option 002, 86–106 V, 48–54 Hz
Option 003, 180–230 V, 48–54 Hz
Option 004, 208–250 V, 48–54 Hz

Weight: 0.71 Kg (1 lb. 9 oz.)
Shipping Weight: 1.14 Kg (2 lb. 8 oz.)
Dimensions: 5.84 cm (2.3 in.) high, 16.8 cm (6.6 in.) wide, 20.6 cm (8.1 in.) deep

covered by an errata or change sheet. These specifications supersede any prior published specifications. Supplemental information in Table 1-2 is provided to describe general operating characteristics.

1-7. INSTRUMENT AND MANUAL IDENTIFICATION.

1-8. Hewlett-Packard uses a two-section serial number. The first section (prefix) identifies a series of instruments. The last section (suffix) identifies a particular instrument within the series. A letter between the prefix and the suffix identifies the country in which the instrument was manufactured. The manual is kept up-to-date at all times by means of a change sheet which is supplied with the manual. If the serial number of your instrument differs from the one on the title page of this manual, refer to the change sheet supplied with the manual. All correspondence with Hewlett-Packard should include the complete serial number.

1-9. OPTIONS.

1-10. Table 1-3 lists the options available for the Multimeter.

1-11. The instrument contains a label identifying the line voltage for which the instrument is wired. If the jumper wires are changed to accomodate a different line voltage, the label must also be changed to indicate the new configuration.

NOTE

If the instrument is to be operated at a line frequency other than the one indicated on the label, it will be necessary to perform the Clock Frequency Adjustment in Section V of this manual.

Table 1-3. Options.

Option	Description
Standard	104-127, 54-66 Hz, 6 VA, 60 mA Max.
001	86-106, 54-66 Hz, 6 VA, 70 mA Max.
002	86-106, 45-54 Hz, 6 VA, 70 mA Max.
003	190-230, 48-54 Hz, 6 VA, 30 mA Max.
004	208-1[illegible]0, 48-54 Hz, 6 VA, 30 mA Max.

1-12. ACCESSORIES.

1-13. The accessories available for use with the Multimeter are listed in Table 1-4.

Table 1-4. Accessories.

Accessory Number	Description
Model 11096A	R F Probe, 100 kHz to 500 MHz (down 3 dB at 10 kHz and 700 MHz)
Model 11096A Adapter	1251-4242
Model 11067A	Universal Test Lead Kit
Model 11068A	Soft Carrying Case

1-14. SAFETY CONSIDERATIONS.

1-15. This Operating and Service Manual contains cautions and warnings alerting the user to hazardous operating and maintenance conditions. To ensure the safety of the operating and maintenance personnel and retain the operating condition of the instrument, these instructions must be followed.